

DEEP IGNORANCE --- Day 1

PREPARATION

Sign over outside of door: "DEEP IGNORANCE"

Cover door window with opaque paper or cardboard, with many tiny door-flaps cut into it, which can be opened one at a time to let in a bit of light.

Sign on/over chalkboard: "WELCOME TO DEEP IGNORANCE"

Sign on door into storeroom: "SCIENCE"

Prepare big white box: w/ sign on sides: "SCIENCE"; inside box:

head with brain (on bottom), model eye, lens, camera, microscope or binoculars, calculator, thermometer, dissecting tools, glassware, prism, metric ruler, beaker w/ sand (SiO_2), graduated cylinder, gel box, chunk of silicon (basic source of computers), bag of silicone!, star, rock, stone tool, fossil, etc.

Place box in storeroom on cart, with 1-2 bright flood lights (from photography), directed out into room, with switch close to door, and have CO_2 Fire Extinguisher handy (for Spielberg Effect).

Dress all in black, to represent the "Darkness of Deep Ignorance"

Have all room curtains closed, with the room as dark as possible. Room lights off.

Have a tiny, dim light over in one corner of the room (turned on).

PROCEDURE on FIRST DAY OF SCHOOL

Welcome students at the door to "DEEP IGNORANCE". Have them sit where they can.

When they are all seated, explain that "most of reality, whatever that is, is unknown to us.*** Think of this darkened room as the vast universe of 'Deep Ignorance' (it's actually much darker, so dark that only a tiny corner has a little dim light of knowledge in it (show the dimly lit corner).

Scientists, who's main job is to probe the darkness, have become increasingly aware how little we know, and the virtually infinite amount of ignorance that's still out there." [Use OH projector exposing key phrases as you proceed. See sample attached.]

"But lets see what we DO know..."

Start asking individuals "What do you know?" (your name? you are alive? earth is round?...)

For each response, open another tiny "window" in the door-window mask, to "Let a little more light into the darkness of Deep Ignorance"

After several of these, ask "How do you KNOW these things? (experience, books, school....)"

"Are you CERTAIN these things are accurate?"

"Has anyone discovered that something you knew, turned out to be wrong, or different from what you thought?" [flat earth, stars in a dome, fixed continents, fixed spp., sun around earth,...]

"How would you find out if your knowledge is accurate? How can we penetrate the Dark of Deep Ignorance?" [somewhat rhetorical, but you may get a few responses]

"Have you ever heard of SCIENCE?"

"How is Science different from English, History, Math, etc.?" [labs, observe, ...]

Go to storeroom, and open the door of SCIENCE, [blast w/ fire extinguisher and turn on the flood lights at the same time, letting the light pour out into the room]. Pull out the cart with the SCIENCE box on it, and proceed to take out items one at a time, with brief appropriate comments about these "tools of science".

Finally, say "And here is the best tool of all.... What do you think it is? [take some guesses], then pull out the head with the brain in it, and say "and each one of you has one of these!"

"Unfortunately, our brain is easily fooled by mother nature, and by other people. How can we penetrate that fog of misinformation and illusion?"

"We use the PROCESS of SCIENCE, a TOOL for probing the unknown, for getting likely answers to our questions about nature."

"Would you like to know how it works? That's what this course is about. Stay tuned."

HOMEWORK (Distribute handouts with outline of today's session, plus the assignment)

List 10 ideas (concepts or understandings) that you know about the natural world, AND list 10 things about the natural world that you don't know. (ok to ask for help from parents, friends, etc.). Bring these lists with you tomorrow, with your name and period on it.

*** There are things you know accurately. There are things you may think you know, but are actually misinformed about, e.g. the idea that summers are warmer because we are closer to the sun then). There are things you know you don't know (aware of relativity, but don't understand or know the details). And then there is DEEP IGNORANCE: things you don't even know you don't know!

Deep Ignorance ---- Day 2

Get students into groups of about 4, each group to prepare one combined list from the homework lists (share, expand, revise; consider: is each item a valid product of science?). Each group to list the group's combined efforts on one large sheet, and staple all homework sheets behind the group sheet.

Hold class discussion, with each group in turn offering an idea from science. List these on board. Go around to each team 2-3 times, generating 16-24 ideas.

Ask: "Did your group produce more or different ideas than you did alone? Did the class generate any ideas not produced from your group? [Class should see the greater productive value of collaborative group work].

Getting back to the list, ask "Is it important to know these things? Why, or why not?" [Have a list of benefits, or see "Why is Science Important to Me?" below.

Why is Science Important to Me?

Battery dead, which post to put jumper cables on?

Choosing shoes for your sport

Choosing healthy food

Taking antibiotics properly (for prescribed time)

Enjoying nature, satisfying your curiosity

Understanding your world, and what makes it "tick"; you can get it to work better for you, or help others better.

Appreciation of nature (better if you've done it, tried it, worked at it)

Appreciation of good musical technique

Appreciation of good baseball play

Appreciation of good football play

Appreciation of good dancing

Appreciation of good movies

Appreciation of good cooking

Appreciation of good sewing etc., etc., etc.

Could be helpful...If science is such a powerful problem solving tool, it might help you to solve some of your own problems

Science is a powerful process for...

- isolating causes of problems (car problems, cooking problems, health problems, athletic problems, behavior problems, etc.), and
- considering various possible solutions, and checking them out.
- making decisions

WELCOME TO DEEP IGNORANCE

1. There are things you **know**, and they fit reality.
2. There are things you **think** you "know", but they do not fit reality.
3. There are things you **know** about, but you don't really know or understand them.
4. There are things you **don't even know you don't know!**

This is **DEEP IGNORANCE.**

The more we learn, the more we find out how little we know.

Most of reality, whatever that is, is unknown to us.

This darkened room symbolizes the vast universe of...

"Deep Ignorance".

Most of what we do "know" we are not certain of.

What DO you know?

How do you KNOW these things?

Are you CERTAIN these things are accurate?

Has anyone discovered that something they "knew" turned out to be wrong?

How would you find out if your knowledge is accurate?

Have you ever heard of SCIENCE?

How is SCIENCE different from English, History, Math, etc.?

The best tool of all: _____

Unfortunately, our brain is easily fooled by mother nature, and by other people.

How can we penetrate that fog of misinformation and illusion?

We use the PROCESS of SCIENCE...the most important tool of science

Would you like to know how it works? That's what this course is about.... Stay tuned."

HOMEWORK

List 10 ideas (concepts or understandings) that you **know** about the natural world, AND...

List 10 things about the natural world that you **don't know**.

Study the course "Green Sheet"...both sides.
List any questions you have about the Green Sheet.

Complete your Student Info Sheet.

TOMORROW:

Bring these lists with you tomorrow, with your name and period clearly PRINTED on it.

Bring Student Info Sheet

Take permanent seats when you enter

Have Green Sheet questions ready to ask.

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Bring Student Info Sheet

Take "permanent seats" (where you want to sit, at least for the first quarter) when you enter

Have Green Sheet questions ready to ask.